



Im

Oberseminar Partielle Differentialgleichungen

gibt es am

**Montag, dem 20. Februar 2017,**

einen Vortrag von Herrn

**Prof. Dr. Shinya Nishibata**

(Tokyo Institute of Technology)

*“Asymptotic stability of rarefaction waves for symmetric  
hyperbolic-parabolic systems”*

Beginn: **15.15 Uhr**

Raum: **F420**

Interessenten sind herzlich willkommen!

R. Denk, R. Racke, O. Schnürer

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**Abstract:** In the present talk, we discuss a large time behavior of a solution to a coupled system of viscous and inviscid conservation laws. Mainly, we talk about an asymptotic stability of a rarefaction wave, with assuming an existence of an entropy function. This condition enables us to transform the original system to a normal symmetric system, which is a coupled system of hyperbolic and parabolic equations. In asymptotic analysis, we derive an a priori estimate by an energy method. Especially in deriving the basic estimate, we make use of an energy form, which is defined by substituting a smoothed rarefaction wave in the entropy function. The symmetric system is utilized in deriving higher order estimates of the derivatives of solutions. In this procedure, we have to suppose that the stability condition hold at spatial far field. We also talk about the existence and the asymptotic stability of a stationary solution if time allows. These results are obtained through joint researches with My former students Mr. Kota Kawamura, Mr. Tetsuya Mitsuhori and Prof. Tohru Nakamura.

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